REMARKS

In the Office Action, the Examiner rejected claims 1-23, 27, 28, 31 and 32 under 35 U.S.C. §112 (first paragraph), rejected claims 31, 32 under 35 U.S.C. §112 (second paragraph), rejected claims 1-22 and 24-32 under 35 U.S.C. §103(a) as being unpatentable over Japanese Patent Application Number 08217686 A (hereinafter "JP '686"), rejected claims 1-22 and 24-26 under 35 U.S.C. §103(a) as being unpatentable over WO 88/05304 (hereinafter "WO '304"), and rejected claims 1-26 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Number 4,039,559 (hereinafter "US '559") and U.S. Patent Application Number 2002/0068102 A1 (effective filing date December 1, 2000) (hereinafter "US Application '102"). Accordingly, Applicant provides the following marks:

Claim Rejections under 35 U.S.C. § 112 - First Paragraph.

The first paragraph of 35 U.S.C. § 112 ("Section 112") requires that the specification contain "a written description of the invention, and of the manner and process of making and using it . . . [so] as to enable any person skilled in the art . . . to make and use the same."

Claims 1-23, 27, 28, 31 and 32 stand rejected under Section 112, first paragraph, because the specification, while being enabling for treating the claimed conditions, does not reasonably provide enablement for preventing the claimed conditions and consequently, the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with the above-mentioned claims. More specifically, the Examiner said undue experimentation would be required to practice the invention as claimed.

To overcome a rejection under the first paragraph of Section 112, the "applicant must

demonstrate by argument and/or evidence that the disclosure, as filed, would have enabled the claimed invention for one skilled in the art at the time of filing." MPEP § 2164.05. "[I]f the specification in question provides a reasonable amount of guidance with respect to the direction in which . . . experimentation should proceed," a rejection cannot be sustained on the theory that undue experimentation is necessary to make or use the invention. *Id.* § 2164.06, quoting *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988).

Applicant respectfully submits that undue experimentation is not required as claims 1-23, 27, 28, 31, and 32 are adequately enabled by the specification.

Applicant admits the causes of some liver related disorders and cancers are varied and unpredictable. However, this is not true for all such disorders and cancers. One such cause is carbon tetrachloride (hereinafter "CC14). As the specification explains on page 3 lines 3-8 of the original application (as modified by the preliminary amendment), CC14 is the "primary compound used in the induction of liver injury and tumors. As a potent hepatotoxin, CC14 produces centrolobular necrosis, which causes liver damage. It has been widely accepted that the liver injury induced by CC14 depends upon its metabolism by cytochrome 2E1 into the highly reactive form of the trichloromethyl (CC13) radicals that initiate lipid peroxidation of cell membranes."

Applicant does not claim the invention prevents and treats all liver related disorders and cancers, rather Applicant merely claims the invention prevents and treats CC14 induced liver damage. In support of Applicant's claims, five detailed experiments were performed in which in each and every instance CC14 induced liver damage was prevented. The results of these experiments are briefly summarized below:

1) Liver sections in the placebo + CC14 group showed acute liver damage whereas there was a significant decrease in the number of swollen, lipid containing, and apoptotic hepatocytes in the *Morinda citrifolia* + CC14 group (See Specification, p. 5, ln. 10-14) ;

2) Carcinogen(DMBA)-induced DNA adduct formation was reduced by 70% (See Specification, p. 12, ln. 21-22) ;

3) Livers exposed to CC14 did not develop disease or cancer (See Specification, p. 13, ln. 7-8) ;

4) The centrollubelous necrosis induced by CC14 was protected (See Specification, p. 15, ln. 21-23) ; and

5) A significant decrease in liver injury occurred when induced by a lower dose of CC14 (See Specification, p. 17, ln. 9-11) .

Accordingly, Applicant submits that "the specification in question provides a reasonable amount of guidance with respect to the direction in which . . . experimentation should proceed," and thus undue experimentation is not necessary to make or use the present composition commensurate in scope with present claims 1-23, 27, 28, 31 and 32. Applicant respectfully requests a withdrawal of this rejection.

Claim Rejections under 35 U.S.C. § 112 - Second Paragraph.

Claims 31-32 stand rejected under Section 112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. More specifically, Examiner considers Claim 31 indefinite because the claim does not state what the method is inhibiting or preventing the hepatic carcinogens from doing. Applicant respectfully submits that the amendments made to Claim 31 and the addition of Claim 33

overcome the Examiner's rejections by stating what the method is inhibiting and preventing the hepatic carcinogens from doing. Referring now to the language of amended Claim 31, the method inhibits and prevents the hepatic carcinogens "from causing liver damage." Similarly, in Claim 33, "liver damage is inhibited and prevented by destroying said hepatic carcinogens." Accordingly, Applicant respectfully submits that the rejections under 35 U.S.C. § 112, second paragraph, have been overcome by the amendments included herein.

Claim Rejections under 35 U.S.C. § 103.

An invention is unpatentable under 35 U.S.C. § 103(a) ("Section 103(a)") "if the differences between the subject matter sought to be patented over the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains."

To establish a *prima facie* case of obviousness, three criteria must be met. "First, there must be some suggestion or motivation . . . to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations." *Manual of Patent Examining Procedure* § 2142 (8th ed., 2001).

"Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination." *ACS Hosp. Systems, Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984); *quoted in In re John R. Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992). Any such suggestion must be "found in the prior art, and not based on applicant's disclosure." *In re Vaeck*, 947 F.2d 488, 493 (Fed. Cir. 1991); *cited with approval in MPEP* § 2143 (8th ed., 2001). Indeed,

"[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); *cited with approval in MPEP* § 2143.01 (8th ed., 2001).

A "clear and particular" showing of the suggestion to combine is required to support an obviousness rejection under Section 103(a). *Brown & Williamson Tobacco Corp. v. Phillip Morris Inc.*, 229 F.3d 1120, 56 USPQ2d 1456 (Fed. Cir. 2000). For the reasons set forth below, Applicant submits that the prior art fails to clearly and particularly suggest the combination indicated by the Examiner; thus, Applicant's claims are not obvious in view of the prior art references.

Applicant's claims 1-22 and 24-32 stand rejected under Section 103(a) as unpatentable over JP '686. Applicant's claims 1-22 and 24-26 stand rejected under Section 103(a) as being unpatentable over WO '304, and Applicant's claims 1-26 stand rejected under Section 103(a) as being unpatentable over US '559 and US Application '102. Applicant respectfully submits that the above references do not render obvious the claims of the present invention in light of their collective failure to disclose or suggest a method for treating CC14 induced liver damage by administering *Morinda citrifolia* as disclosed by the present application.

A. JP '686 Reference

JP '686 teaches administering *Morinda citrifolia* to treat hepatitis and hepatic cancer caused by *Helicobacter pylori* (see English abstract). Applicant respectfully submits one cannot assume the only way to treat hepatic cancer is by blocking CC14. Neither Applicant, nor modern science suggests there is only one way to treat cancer. In Applicant's application, Applicant says

"CC14 is the primary compound used in the induction of liver injury," suggesting there are other compounds used in the induction of liver injury (See Specification, p. 3, ln. 3-4). Modern science also does not suggest a single causal factor of hepatic cancer, rather a long list of contributing factors including: cirrhosis of the liver; hepatitis B or C; haemochromatosis; carcinogens, including aflatoxin; polyvinyl chloride (PVC); liver flukes; thorotrast; radiation exposure; radiation exposure; toxins; vinyl chloride; smoking; contraceptive pills and anabolic steroid use. Because JP '686 neither discloses nor suggests its composition cures all causes of cancer where many potential causes exist, Applicant respectfully submits the present invention is not rendered obvious in view of JP '686 under Section 103(a). Additionally, the specific amounts and forms of the composition as claimed in the present invention would not be obvious to one skilled in the art because such specific compositions and forms are necessary in order to result in the successful treatment of CC14 induced liver damaged, as evidenced by the experiments and language in Applicant's specification, which describes the effect of antioxidant activity of *Morinda citrifolia* as "dose-dependent." (See "Example One" of Application).

B. WO '304 Reference

WO '304 teaches administering *Morinda citrifolia* to treat viral hepatitis. Applicant is claiming a new use of *Morinda citrifolia,* specifically that administering *Morinda citrifolia* prevents and treats a single cause of liver damage, namely, CC14 induced liver damage.

WO '304 specifies only that the claimed medical composition treats viral hepatitis B, hepatitis virus non A and non B and acquired immunodeficiency syndrom. No mention is made of the specific reasons the medical composition is able to treat such conditions.

Furthermore, WO '304 claims a process for making a medical composition that includes

as one of many ingredients, *Morinda citrifolia.* In contrast, Applicant claims *Morinda citrifolia* as its primary ingredient and only active agent. WO '304 claims the composition as a whole, which includes andrographis paniculata, cyclea barbata, *Morinda citrifolia* and merremia mammosa. It does not claim that each ingredient separate and independent from the composition achieves the desired result of treating viral hepatitis. Further, the specific amounts and forms of the composition as claimed in the present invention would not be obvious to one skilled in the art because such specific compositions and forms are necessary in order to result in the successful treatment of CC14 induced liver damaged, as evidenced by the experiments and language in Applicant's specification, which describes the effect of antioxidant activity of *Morinda citrifolia* as "dose-dependent." (See "Example One" of Application). In any event, a "clear and particular" showing required to support an obviousness rejection under Section 103(a) is not present. *Brown & Williamson Tobacco Corp. v. Phillip Morris Inc.*, 229 F.3d 1120, 56 USPQ2d 1456 (Fed. Cir. 2000)

Consequently, Applicant respectfully submits the present invention is not rendered obvious in view of WO '304 under Section 103(a). Thus, Applicant respectfully requests withdrawal of the rejections of claims 1-22, 24-26 under Section 103(a).

C. US '559 and US Application '102 References

Applicant's claims 1-26 stand rejected under Section 103(a) as unpatentable over US '559 and US Application '102. Applicant respectfully submits that the above referenced art, considered cumulatively, does not render the present invention obvious.

Specifically, Applicant submits that one ordinarily skilled in the art would not look to US '559 and US Application '102 to arrive at the claims of the present invention. The claims of the

present invention recite specific concentrations of *Morinda citrifolia* different from those of the two above-mentioned references. Applicant claims doses containing specific percentages of *Morinda citrifolia* whereas US Application '102 does not. The inclusion of these percentages is critical. As noted in "Example One" of the present invention, "the antioxidant activity of *Morinda citrifolia* shows a dose-dependant effect against superodixe anion radicals (SAR) and lipid hydroperoxides (LPO) *in vitro.*"

In addition, there is no motivation or suggestion to combine the above references. US '559 in no way suggests utilizing *Morinda citrifolia* in to treat and prevent liver damage. US '559 merely suggests the "physiological damage resulting from the administration of CC14 to animals is thought to be due to the free radical that is brought about by the administration." (See Column 4, lines 3-6). Likewise, US Application '102 does not suggest or motivate one skilled in the art to utilize the specific concentrations of *Morinda citrifolia* to prevent and treat CC14 induced liver damage. US Application '102, in fact, teaches away from the use of specific amounts of *Morinda citrifolia* in concentrations, instead focusing on the general use of dietary supplements in order to reduce cellular damage. It would not be obvious to one skilled in the art to treat the "physiological damage" referred to in US '559 by the specific dosages of *Morinda citrifolia* given in the present invention.

In the absence of any suggestion or motivation to combine the above-referenced prior art, the mere fact that such prior art could be combined does not render the present invention obvious MPEP § 2142. Moreover, in this case the combined references fail to produce or suggest the specific dosages necessary to the implementation of the claimed invention. Applicant thus respectfully requests withdrawal of the rejections of claims 1-26 under Section 103(a) in view of

US '559 and US Application '102.

D. Conclusion

Applicant therefore respectfully submits that neither JP '686, WO '304, US '559, nor US Application '102 renders the claims of the present invention obvious as none of the references teach nor suggest the claims of the present invention. A withdrawal of the rejections made under Section 103(a) is therefore respectfully requested.

Based on the foregoing, Applicant believes that the claims of the present invention are in condition for allowance and respectfully requests the same.

Should the Examiner have any questions, comments, or suggestions in furtherance of the prosecution of this application, the Examiner is invited to initiate a telephone interview with undersigned counsel.

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Respectfully submitted,

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